ADMINISTRATION OF A DATABASE MANAGMENT SYSTEM ON A LOCAL AREA NETWORK

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I. Abstract

With the growing amount of data sent, calculated, and retrieved from research projects, the need for a Database Management System has immensely grown. A database system is essentially nothing more than a computerized record-keeping system, an electronic filing cabinet of computerized data files. The advantages of using the database are compactness, speed, less drudgery and currency. The compactness of the data means that there is no need for voluminous paper files. The speed of the database eliminates the drudgery of maintaining files by hand. It also offers currency, which is up-to-date information that is available on demand any time. We implemented the Database Management System called Oracle. Oracle allows the user to view, add, update, delete, create, and remove data. We are currently in the application development phase, which is the importation of a previously developed database system into the Oracle environment; this database application is for the Urban Environment research groups. In addition, user accounts and user profiles for the introduction to Database Management Systems course have been created. All projects and assignments for the class will be implemented using SQL Plus Server.

II. Project Description

This project consists of the installation and configuration of Oracle 8 Client on 16 computers and the creation of user profiles and accounts for the Introduction to Database Management System course at Medgar Evers College.

III. Materials

Oracle 8 Server Enterprise Edition
Oracle 8 Client
1 Unix Server
16 Computers running Windows 98
Local Area Network

IV. Discussion

To complete the projects I had to study the many roles of the Database Administrator. The Database Administrator or DBA is the person responsible for managing all database activities. In small organizations, this person usually has other responsibilities including the overall management of the computer resources. In medium and large organizations, the role of the DBA is a full-time job for one or more people. The job of the DBA usually includes the following responsibilities: Database design, User coordination, Backup and recovery, System security, and Performance monitoring.
When designing the database, the DBA must decide how the data is to be represented in the stored database. This process is usually referred to as physical database design. Having done the physical design, the DBA must then create the corresponding storage structure definition.

Through User coordination, the DBA is responsible for letting users know what data is available in the database and how the users can retrieve it. The DBA also reviews user requests for additions to the database and helps establish priorities for their implementation. Other aspects of user coordination include consulting on application design, providing technical education, assisting with problem determination and resolution, and system-related services.

Backup and recovery are important due to the centralization of data in a database makes an organization particularly vulnerable to a computer system failure. The DBA is often responsible for minimizing the risk, making sure that all data is regularly backed up and preparing (and periodically testing) contingency plans for a prolonged equipment or software malfunction.

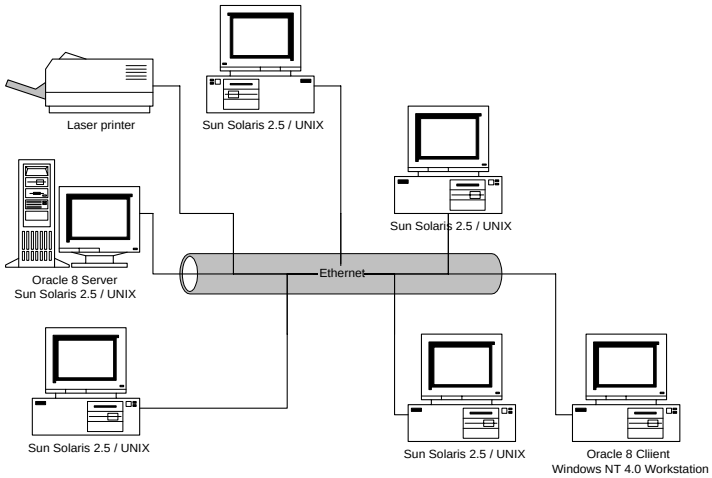
The DBA is responsible for establishing and monitoring system access privileges to prevent the unauthorized use of an organization's data. The DBA is responsible for the performance of the database management system. A number of factors such as file sizes and the types and frequency of inquiries can affect the performance of the database, usually measured in terms of response time to a user request. Most database management systems have utility programs that enable the DBA to monitor these factors and make adjustments to provide for more efficient database use.

After studying these responsibilities I was able to complete the applications. The first application was the installation of Oracle 8 Client on 16 computer for the Introduction to Database Management course. The second application was the creation of user profiles and accounts for the class.

V. Conclusion

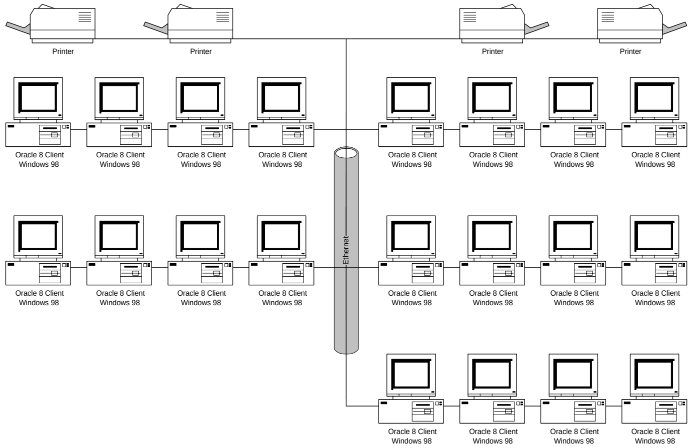
The following diagrams are models of the Advanced Computer Research Laboratory and the classroom for the Introduction to Database Management Systems course.

Advanced Computing Laboratory



Introduction to Database Administration Classroom

All members of this class will be able to connect to Oracle 8 Server located inside



the Advanced Computing Research Laboratory using SQL Plus Server.

I completed the task of adding users to the database using the following Structured Query Language statement.

```
SVRMGR>    create user Scott
           identified by tiger
           default tablespace users
           temporary tablespace temp
           profile student
           quata 15M on system;
```

In this statement I created a user named “Scott” whose password is “tiger”. I also assigned the user to a default tablespace. This means that whenever Scott creates and object it will be created in the tablespace called “users”. When Scott sorts his data it will be sorted in the tablespace called “temp”. Scott can also create as many tables as he like as long as they do not total more than 15 Megabytes.

Acknowledgement

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